

INTERCOLLEGIATE BROADCASTING SYSTEM

MEMORANDUM

December 13, 1948

TO : STATION MANAGERS OF MEMBER STATIONS - Trial and full Member
Attention: TECHNICAL DIRECTORS
FROM : I. B. S. ENGINEERING DEPARTMENT
Herbert B. Barlow, Jr., 1725 New Hampshire Ave., N.W., Washington 9, D.C.
SUBJECT: Field Strength Data

To date we have heard from only a relatively few of our stations with regard to field strength measurements. Perhaps you do not realize that the future of your station is a stake. We in national IBS are going to represent you before the Federal Communications Commission, but we can't do a good job unless we receive cooperation from every station in the System.

To recount what we desire:

1. A diagram of your r.f. distribution system.
2. A diagram showing coupling between your transmitter(s) and r.f. lines.
3. The power input to the final stage of your transmitter(s) and r.f. amplifiers, linear type (a few stations use these at the ends of r.f. lines to boost r.f. power).
4. The r.f. power input to your r.f. lines (in many cases this differs considerably from the power input to the transmitter final; there may be a dummy load absorbing power besides the usual efficiency of the final stage to consider).
5. Type of frequency control of your transmitter(s).
6. FIELD STRENGTH DATA.

In order to furnish the field strength information as required by item 6 above, we have suggested that the stations participate in a cooperative purchase plan for the purchase of approved type field strength meters. In some cases certain stations have access to acceptable types of field strength meters, and some have told us so. If this is true in your case, tell us so. In answer to the question "What does approved type mean?", let me say that the F.C.C. requires that all measurements must be made with a loop antenna below 18 mc. This immediately rules out the Ferris Model 32B, which is quite widely available, unless it is equipped with an auxiliary loop antenna, which is sold as an accessory. Readings taken using the vertical rod which comes with this meter are not precise enough for our purposes, and to satisfy the FCC. The r.f. field being measured by result from radiation from more than one source. Taking readings with a loop permits reading the contribution from each radiation source; the rod antenna gives readings only of the resultant field which may be less than the individual fields which make it up.

Now don't be reluctant in turning in data to us that show you are illegal under the present regulations. In many colleges, we have heard that it is impossible to put a decent signal into the dorms and remain legal. This would seem to indicate that the present law should be revised to give us a greater level of legal radiation. However, in some cases excessive radiation may be due to an inefficient transmission system, therefore it is imperative that we know in detail what your transmission system consists of when you submit your field strength data. In any case, your reported data will not be used against you by the FCC, for the college and station names will be held in strictest confidence by the IBS.

Briefly, your field strength data should give readings in the dormitories as well as readings outside at various distances away from the dormitories and power lines and r.f. lines which make up the campus power distribution system and your r.f. distribution system. Such readings must be as accurate as possible, and I reiterate again the necessity of using an approved "loop type" meter. Homemade types are useful in preliminary work, but do not give acceptable readings, since they are merely comparative.

If you have any concern for the future of your station and that of college radio as it exists today, let us have your cooperation! We are only asking that

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you help us get data and in the future that you maintain whatever is prescribed as legal radiation. Your \$67.50 for a share in a field strength meter is a continued investment, for it will be the duty of every station to maintain legal operation of their r.f. system, and this only can be done by periodic checks. Standard Broadcast stations are charged with the duty of maintaining specified patterns of radiation in many instances, and if these stations deviate from these set patterns they must answer to the FCC. So must campus stations if they operate with illegal radiation. This project is by no means a fly-by-night venture; but one of lasting importance. Thus, if you do not have access to the approved type Federal or RCA field strength meters, it does not seem to be asking too much for each station to buy a share in a meter.

At any rate, LET US KNOW where you stand on the matter. Return the form attached to my October 9 memo, or write me. My address is given at the start of this memo.

I am enclosing standard procedures for taking field strength measurements which should answer any questions you have along these lines. I am also enclosing excerpts from recent replies to questions which have come in from various parties; some of these questions may have occurred to you, and these excerpts will help to answer them in greater detail than was possible in this memo.

Below is given a summary of what has been heard so far from the stations about the various aspects of this project. How do you stand?

U. of Alabama	Have no meter, but report they desire one. Have sent no data.
Amherst	Will purchase share of meter early in 1949. Have sent in complete data on r.f. system except for field strength readings.
Bard	Considering purchase of share of meter.
Brown	Report no funds available for purchase of share of meter. Have sent in complete data on r.f. system, except no f.s. readings.
Carnegie Tech.	Believed to have a meter, make not known.
Cornell U.	Have access to a meter constructed by a Physics professor. Are making a survey of field strengths on their campus. Have submitted no data about their r.f. system.
Creighton U.	Have an RCA 308B meter. Have submitted complete data about their r.f. system including field strength readings.
U. of Idaho	Have sent in complete data on r.f. system except field strengths.
U. of Illinois (Galesburg)	Have purchased one share in a field strength meter. No data.
MacMurray College for Women	Have sent in complete data on r.f. system except for field strength data. Can't afford meter.
Olivet Nazarene	Have access to approved meter. Have submitted complete data about their r.f. system including field strength readings.
St. Lawrence	Have purchased one share in a field strength meter. No data.
U. of South Carolina	Have no meter; but report they desire one. No data sent in.
Swarthmore	Have access to approved meter. Promise to send in data, also take data at college stations in area: Haverford, Lehigh, Lafayette, etc.
Union	Have borrowed meter from a local broadcast station and taken readings but have not yet submitted them to IBS.
Wesleyan	Can't afford meter.

(Signed) Herbert B. Barlow
Engineering Director

HBB/OPR

P.S.

Since typing the above message Olivet Nazarene has sent in their share for a field strength meter. I hope additional payments will soon be received which will enable us to purchase at least one instrument.